

C. Renewable Capacity Credit Proposal

Submitted by: Northern California Power Agency

1. Interpretation of the Commission's Goals and Rationale for Strategy

The California Public Utilities Commission indicated in its December 20, 1995 Electric Service Markets policy decision, D.95-12-063, corrected by D. 96-01-09, that protection of the state's existing investment in renewable technologies and the promotion of future development of renewables remain a continuing and important state policy. The Commission indicated that a requirement that the electric supply portfolios of jurisdictional utilities include a renewable component is consistent with its approach to electric industry restructuring, and expressed a preference for a "market-based" approach.

The over-arching goal of electric industry restructuring as asserted by the Legislature in Assembly Concurrent Resolution 143 (1994) is achieving lower rates and bills for consumers, consistent with assuring environmental quality and achieving other public policy goals including maintaining a diverse electricity generation resource mix. Requiring the state's consumers to support a substantial level of electric generation capacity relying on renewable resources within the state is consistent with that fundamental goal if the conventional understanding of renewable resources, including hydropower, is employed. Any arbitrarily limited notion of renewable resources would fail to comply with the requirements both of the Commission and the Legislature, because it would artificially limit the actual diversity of non-fossil renewable resources such portfolios would otherwise exhibit.

The Renewable Resource Capacity Credit (RRCC) proposal satisfies all of the Commission's criteria. Under the system established by this proposal a renewable facility located in California will get a market or contract price for its energy output *and* an additional payment for the value of the operable renewable capacity in the form of a tradeable renewable resource capacity credit. The added rent associated with the tradeable credit will support existing facilities and attract new facilities that are of greater or equal value or are needed to track growth in peak demand.

The proposal is simple and non-discriminatory. The proposal applies equally to all retail sellers in California (and therefore all electric customers.) It treats all renewable technologies the same, while allowing for operational differences and differing levels of risk tolerance and risk aversion of the capacity owners. While it requires an intense level of analysis prior to initial establishment, once established it is extremely simple: energy is sold on a market for a market price and credits are created and traded independent of the energy sales (unless bundled pursuant to bi-lateral agreement between a generator and retailer.) This radical separation between energy markets and renewable capacity credit market permits the energy

market created by restructuring to develop according to its own logic and economies, separate from the generation of additional revenue to support the policy objective of renewable resource support. It limits the extent to which energy markets are distorted by the policy objective, while supporting a revenue stream dedicated to the policy objective.

The proposal is presented in the form of draft legislation, including extensive legislative findings, because legislation will be required to

- apply a renewable portfolio requirement to all retail sellers, including public agencies and marketer/brokers;
- construct the credit, credit exchange mechanism and credit exchange procedures;
- develop the penalty mechanism.

Legislative language may supply a level of rigor of presentation and may support a level of rigor in analysis and critique that could be important in area where the details matter. The narrative description of attributes should not be a substitute for reading the actual text of the proposal.

2. Program Overview and Description

a. Narrative Presentation

The attributes of the system contained in this proposal are:

- A requirement that each retail seller of electricity in California obtain on an annual basis renewable resource capacity credits (RRCs) equalling or exceeding 18 percent of the sum of its monthly peak loads.

Credits for renewable capacity achieves the objective of maintaining renewables in the state's portfolio. It permits relative stability and predictability in the credits market. The 18 % number is roughly the proportion of statewide net dependable renewable capacity as per the 1994 Electricity Report of the California Energy Commission. ER '94 (Table 7-1, page 94) available to meet 1998 forecasted statewide annual peak demand plus losses (Table 6-3, page 83.) Since the standard is based on average monthly rather than annual peak, it is unlikely that there will be a shortage of RRCs.

- RRCs are issued monthly to owners of facilities located in California using renewable resource electric generation technologies (RREGTs) that meet an operational performance requirement (the qualifying capacity factor (QCF)).
- RREGTs include hydro but not pumped storage.

- California location requirement assures that rents associated with credits that are paid by local California customers purchase local California benefits
- The QCF creates incentive for operating renewable facilities at average levels of efficiency, and smooths out variations in output due to seasonal operating constraints (wind, hydro, solar), extended scheduled maintenance (geothermal), forced outages, etc.
- monthly issuance lessens opportunities for gaming, speculation.
- The number of RRCCs issued to any owner is based on the owner's registration of a capacity value for a facility utilizing RREGT, up to the nameplate for the facility.

This permits an owner to calibrate levels of risk and reward. Registration of a low number increases the probability that credits will be awarded, but reduces the number of credits. This is important for intermittents (wind and solar) and facilities with seasonal operating constraints (hydro, biogas) or probabilities of forced outages (biomass).

- The QCF is calculated as the ratio of energy output to the registered capacity for the facility for a given month. If the QCF equals or exceeds the average annual capacity factor for facilities of that technology type, as determined by the Energy Commission, the facility receives RRCCs in an amount equal to the capacity registered by the owner.
- Credits are tradeable among owners and retail sellers on an RRCC exchange established and maintained by the Energy Commission
- A substantial fine is to be paid by non-complying retail sellers, proceeds of the fine to support research and development in renewable technologies.
- RREGTs to include in-state hydro, geothermal, solar, wind, biomass, and "hybrids." Hybrids limited to 25 percent fossil fuel input.
- Registration of capacity values; calculation of qualifying capacity factors; auditing, certification, and issuance of credits; administration of the penalty fund are all the responsibility of the Energy Commission.

An issue of particular importance in the renewables area is raised by the fact that the tradeable credit represents additional cost for California retail ratepayers. (This is true of both an energy credit and a capacity credit.) The RRCC proposal properly limits credit eligibility to California facilities, not facilities located in other states which do not have similar electric generation portfolio requirements and programs, and which do not provide

any of the local environmental and economic benefits for which California ratepayers are paying. This aspect of the proposal effectively refutes arguments for exclusion of hydropower based on the ability of Northwest hydro to “swamp” the market. Sales of that energy may indeed impact California energy markets because of its cheapness and (with re-operation) environment beneficence, but such sales will be irrelevant in terms of the renewable capacity credits designed to sustain the California renewable portfolio. Only in-state facilities qualify.

This aspect of the proposal (limitation of credit eligibility to California facilities) also implicates the Commerce Clause of the U.S. Constitution. Since Congress has, in the Energy Policy Act of 1992, directed the several states to develop integrated resource plans that include consideration of renewables, there is no issue of express pre-emption by Congress that might invalidate an RRCC program. Rather the concern is that the limitation on capacity eligibility to California-located facilities may implicate the “dormant” Commerce Clause, that is, the potential for future Congressional action that may by implication invalidate “burdens” placed by individual states on interstate commerce. The concern is misplaced.

In the RRCC approach, there is no discrimination “in favor of California renewable generators and against out-of-state renewable generators” with respect to sales of energy or power -- the commodity or “article of commerce” that flows among the states. Every generator is entitled to sell electric energy at retail and at wholesale within California at a market clearing price or at a contract price. There is no prohibition or restriction of any kind on energy imports. There is no exclusion from a “market for renewable energy sales that satisfy the portfolio standard” because the standard is not predicated on sales of energy. *The RRCC standard is satisfied by inclusion of qualifying renewable capacity in a generating resource portfolio that is scaled to meet demand requirements.*

The application of the RRCC requirement is not applied in a manner that discriminates against interstate commerce. All retailers, regardless of location, have the same requirement predicated on the retail sales nexus each retailer has with end-use buyers located within California. It is not obvious that a discrimination analysis predicated on interstate traffic in energy applies to such an arrangement because the creation of an RRCC under this proposal is not based on any transactions involving commodities or articles of commerce.

Typical discriminatory activities that run afoul of the “dormant” Commerce Clause include:

- 1) Prohibitions on commodity imports into a state, direct or indirect. Wyoming v. Oklahoma, (1992), 112 S. Ct. 789
- 2) Prohibitions on commodity exports out of a state. Hughes v. Oklahoma, (1979), 99 S. Ct. 1729; Pike v. Bruce Church, Inc., (1971), 397 U.S. 137

- 3) Higher taxes on commodity imports than on local commodities. Oregon Waste Systems v. Department of Environmental Quality, (1994), 114 S. Ct. 1345 (different waste disposal fees); Associated Industries of Missouri v. Lohmann, (1994), 128 L. Ed. 2d 639 (higher use tax for out-of-state sales than sales tax on in-state sales of identical goods); Bacchus Imports Ltd. v. Dias, (1986), 104 S. Ct. 3049 (excise tax exemption for local liquors); New Energy Co. of Indiana v. Limbach, (1988), 108 S. Ct. 1803 (motor vehicle fuel excise tax credit for locally produced ethanol); West Lynn Creamery v. Healy, (1994), 129 L. Ed. 2d 157 (obligation to pay milk surcharge applied to all milk retailers but proceeds distributed only to local milk producers)
- 4) Stated preference or market set-asides for local commodities. Alliance for Clean Coal v. Bayh, (1995), 72 F. 3d 556 (7th Cir. Ind.); Alliance for Clean Coal v. Miller, (1995), 44 F. 3d 591 (7th Cir. Ill.)

The RRCC requirement does not neatly fall into any of these fact patterns. If there is discrimination, it is with reference to what facilities are eligible for an RRCC. Local facilities are eligible because they provide local environmental mitigations, remediations and enhancements. This is consistent with a long-standing distinction in Commerce Clause jurisprudence between economic protectionism on the one hand and health and safety regulation on the other. Sporhase v. Nebraska ex rel. Douglas, (1982), 458 U.S. 941, citing H.P. Hood & Sons v. Du Mond, (1949), 336 U.S. 525.

The RRCC approach requires that all retailers, regardless of location inside or outside the state, acquire capacity credits which are created with respect to facilities that operate in California and whose output is consumed in California. The issue posed by this approach is whether the restriction of capacity credit *eligibility* to local renewable facilities [and the denial of credit eligibility to out-of-state facilities] violates the Commerce Clause. Since there is no impact on the interstate sale of electric energy in California and no discrimination with respect to traders (buyers and sellers of energy) based on their participation in interstate commerce, the impact of capacity eligibility on interstate energy markets is at best incidental. Any incidental impact is arguably justified by the fact that out-of-state renewables do not provide the same local environmental benefits and enhancements, and do not support a Congress-authorized state-level integrated resource plan in the same way that local renewable facilities do. Pike v. Bruce Church, Inc., *supra*.

Finally, achieving local environmental benefits associated with local renewables through a capacity credit program is less burdensome than a “public benefits charge” levied on retailers, the proceeds of which are distributed to local renewable generators. Such an approach may be unconstitutional, based on the analysis of the Massachusetts milk subsidy program conducted by the Court in West Lynn Creamery, *supra*. Or, alternatively, a “public benefit charge” approach, in order to pass constitutional muster, may require California ratepayers to subsidize windfarms in Nevada and biofuel incinerators in Arizona, not a policy result contemplated by the Commission or the Legislature.

b. Proposed Legislative Text

**DRAFT LEGISLATIVE LANGUAGE
TO IMPLEMENT A RENEWABLE PORTFOLIO STANDARD
THROUGH A RENEWABLE RESOURCE CAPACITY CREDIT**

SECTION 1. Section 454.3 of the Public Utilities Code is repealed.

SECTION 2. Section 701.3 of the Public Utilities Code is repealed.

SECTION 3. Chapter 7 is added to Part 1 of Title 1 of the Public Utilities Code to read:

**CHAPTER 7
RENEWABLE ENERGY RESOURCES**

Article 1. Findings and Policy.

3201. The Legislature finds and declares that:

- (a) The State of California has a system of electric generation that is the most technologically diverse in the world;
- (b) The diversity of the California electric generation mix is the result of more than two decades of state policy promoting technological innovation and resource diversity, including electric generation from renewable sources;
- (c) The Congress of the United State has delegated to each state the authority to develop integrated resource plans for electricity supply and consumption within the state that balance local environmental, public health, economic and financial considerations;
- (d) California has exercised the authority delegated by Congress to adopt an integrated resource plan process that protects its environment and promotes the public health and safety of its residents by, among other things, promoting development of local facilities that utilize renewable resource electric generation technologies;
- (e) Many facilities located in California and utilizing renewable resource electric generation technologies provide unique local environmental and public health and safety benefits and enhancements, such as flood-control, fish and wildlife habitat protection and enhancement, air pollution reduction in impacted California airsheds and other forms of environmental remediation directly related to their operation in California;

- (f) It is in the interest of California citizens to retain and expand the environmental and public health benefits of renewable sources of electric generation as an element of its integrated electricity supply resource plan;
- (g) California policy has resulted in substantial investments by California utilities and electric suppliers in electric generation projects utilizing renewable resource technologies, located in California, that have specialized operating constraints related to environmental remediation and mitigation and cost structures different from standard fossil fuel-based generation technologies;
- (h) It is in the interest of California citizens to promote technological diversity and innovation in electricity generation, including electric generation from renewable sources, as an element of its integrated electricity supply resource plan;
- (i) It is in the interest of California citizens to protect California utilities from severe financial hardship resulting from investments in renewable electricity generation facilities that appear uneconomic in the short-run as an element of its integrated electricity supply resource plan;
- (j) Sharing the costs and benefits of renewable electric generation among all retail consumers of electricity in California is just and reasonable and in the public interest;
- (k) The use of market-based mechanisms to support and value investment in electricity generation from renewable sources is preferable to direct or indirect taxation schemes for that purpose;
- (l) the California Public Utilities Commission has expressed its preference for a market-based mechanism as the means to provide for renewable resources;
- (m) market-based mechanisms should promote efficient utilization of existing electric generation facilities employing renewable resources in California and should provide sufficient stability and predictability so that investments in renewable electric generation technologies located in California can continue to be made;
- (n) market-based mechanisms should permit renewable electric generation technologies to compete among themselves on a fair and equitable basis, recognizing that various renewable electric generation technologies have differing operational, financial and cost constraints.

3202. It is the policy of the State of California that retail sellers of electricity include in their electric supply portfolios a substantial proportion of electric generation capacity that utilizes renewable resource technologies.

Article 2. Renewable Resources Portfolio Requirement

3205. For purposes of this chapter “commission” means the California Energy Conservation and Development Commission created by the Warren-Alquist Act of 1974, Public Resources Code, Sections 25001 and following.

3206. For purposes of this chapter electricity is “for sale in California” if it is delivered to a retail seller or to a power pool from which retail sellers purchase electricity.

3207. For purposes of this chapter “power pool” means any arrangement approved by the Federal Energy Regulatory Commission for the dispatch of electric generation on a coordinated basis.

3208. (a) For purposes of this chapter “renewable resource electric generation technology” means electric generation technology producing electricity energy from hydro power; geothermal steam; wind; solar energy; combustion of solid fuel biomass; combustion of gas derived from landfills or other processing of bio-mass; eligible hybrid technologies and such other technologies as the commission may certify pursuant to section 3220.

(b) Hybrid technologies are technologies that utilize a renewable energy source such as solar energy or biomass and a fossil fuel energy source such as natural gas or petroleum-based fuel; an eligible hybrid technology is one for which the fossil fuel component represents less than 25 % of total energy input.

3209. For purposes of this chapter “renewable resource capacity credits” means the credits issued by the commission pursuant to section 3216.

3210. For purposes of this chapter retail sellers of electricity include electric corporations, municipalities, municipal utility districts, public utility districts, irrigation districts, power marketers, and any other person or entity who sells electricity to ultimate end-use consumers located in California, whether or not such person owns distribution, transmission, or generation facilities in California.

3211. Beginning on January 1, 1999 and each year thereafter, each retail seller of electricity shall, on an annual basis, certify to the commission that, during the preceding twelve months, it has obtained and cancelled renewable resource capacity credits representing 18 percent of the sum of its monthly coincident peak loads for those months.

3212. Each retail seller of electricity shall report to the commission the monthly and annual total of its retail electricity sales, the total electric energy delivered to end-use consumers derived from each eligible renewable resource electric generation technology and the date and hour of its monthly peak loads on an aggregate basis.

3213. A retail seller of electric energy who fails to comply with the requirement of section 3211 shall pay a fine equal to 1 mill (\$0.001) per kilowatt-hour delivered to its retail customers during the preceding year into the Renewable Portfolio Research Account, established pursuant to Article 4.

Article 3. Renewable Resource Capacity Credits

3215. (a) The commission shall issue renewable resource capacity credits monthly to owners of eligible renewable resource facilities that meet the following criteria:

- (1) the facility is located in the State of California;
- (2) the facility utilizes a renewable resource electric generation technology;
- (3) during the preceding month the facility met the qualifying capacity factor requirement pursuant to section 3217.

(b) the commission shall issue a credit for each increment of 100 kilowatts of capacity registered by the owner pursuant to section 3218.

(c) Upon issuance, the owner of the renewable resource capacity credit may retain or sell it to any exchange participant in the Renewable Resource Credit Exchange established by the commission pursuant to section 3219.

(d) A credit shall be valid for twelve months following its issuance or until its cancellation.

3216. (a) Renewable resource capacity credits shall be issued by the commission upon receipt from the owner of a verified statement of the preceding month's electricity output from facilities utilizing renewable energy technology and confirmation by the commission that the facility has met the qualifying capacity factor requirement established by section 3217.

(b) The commission may audit or investigate any owner to determine the accuracy of the statement.

(c) The commission shall issue rules and regulations for reporting the operational basis for the credits; for certifying, issuing and cancelling credits; and for extinguishing credits at the conclusion of the twelve month period.

3217. (a) Each facility for which a renewable resource capacity credit is issued shall operate at a qualifying capacity factor for the month for which a credit is received, as determined by the commission.

(b) The commission shall establish a facility capacity factor for each facility using a renewable resource electric generation technology as follows:

(1) The commission shall determine the electric energy output of the facility delivered to the transmission grid for sale in California and shall determine a monthly capacity factor based on such delivery and the registered capacity value for the facility established pursuant to section 3218;

(2) The facility capacity factor for any month shall be the rolling average of the monthly capacity factors for the facility during the preceding twelve months;

(c) The commission shall establish an average annual capacity factor for all facilities of that technology type located in California. The average annual capacity factor shall be based on the ratio of average annual energy output over a representative period of years, as determined by the commission, to rated capacity.

(d) If the facility capacity factor is equal to or greater than the average annual capacity factor, the qualifying capacity factor requirement shall be satisfied for that month.

3218. (a) The owner of each facility located in California utilizing a renewable resource electric generation technology shall register with the commission a capacity value for the facility, measured in kilowatts. The capacity value may be any amount up to the rated capacity of the facility.

(b) The registered capacity value shall be the basis for certification of compliance with the qualifying capacity factor requirement and the issuance of renewable resource capacity credits by the commission.

(c) An owner shall not change the registered capacity value for a facility for three years after registration.

(d) The commission shall issue rules and regulations for the registration and modification of facility capacity factors by owners.

3219. (a) The commission shall create the Renewable Resource Capacity Credit Exchange, which shall be the market for buying and selling renewable resource capacity

credits for purposes of compliance with the Renewable Portfolio Standard established by section 3211.

(b) Retail sellers of electricity and owners of renewable resource electric generation technology may buy and sell credits on the Exchange.

(c) Retail sellers and owners of facilities utilizing renewable resource electric generation technology shall register with the commission as exchange participants.

(d) The commission shall issue rules and regulations governing registration of participants, disclosure of prices, financial responsibility of buyers and sellers, settlements and such other matters that, in the commission's judgement, will facilitate operation of the exchange.

3220. The commission may certify additional renewable resource electric generation technologies whose characteristics are consistent with section 3208.

Article 4. Renewable Portfolio Research Account

3225. (a) There is the Renewable Portfolio Account in the General Fund.

(b) Fines paid by retail sellers who fail to meet the standard established by Section 3211 shall be deposited in the Renewable Portfolio Account.

3226. Funds in the Renewable Portfolio Account shall be appropriated annually to the commission and used to support research and development projects that improve the efficiency, cost effectiveness, and marketability of renewable resource energy technologies, as determined by the commission.

3227. The commission shall adopt rules and regulations for determining renewable energy research and development projects eligible for funding from the Renewable Portfolio Account.

3. Detailed Reponse to Working Group Issue List

a. What Is the Obligation?

a.1. How is “renewables generation” defined for purposes of qualifying for tradeable “renewable energy credits” (RECs) under this proposed program? Do existing and incremental utility-owned renewable-resource generation qualify for Renewable Energy Credits?

Renewable electric generation is defined to include hydro power, geothermal, solar, wind, biomass, and hybrids, which is defined as a technology that utilizes no more than 25 percent fossil fuel as its primary energy source. *The proposal is predicated on credits for renewable capacity, not renewable energy.* Existing facilities are eligible.

a.2. What are renewable energy credits? How do they relate to energy portfolio management?

The proposal is predicated on credits for renewable *capacity*. They do not relate directly to energy portfolio management. They relate to management of the generation capacity portfolio of the state as a whole. In that sense, the proposal is an aspect of integrated resource planning as practiced by California. However, the generation of energy from renewable facilities is necessary to produce capacity credits, so there will be energy produced from renewable facilities available for sale at market or contract prices.

a.3. How are a diversity of renewables encouraged?

The renewable portfolio capacity standard is high enough that no single renewable technology can produce all of the necessary credits.

a.4. Are currently high-cost technologies or pre-commercial technologies fostered by this program?

Consistent with the overall goal of electric restructuring of reducing electric energy costs, this proposal does not selectively encourage high-cost technologies or precommercial technologies. Rather, it creates a secondary market for renewable capacity credits that afford owners and operators of renewable electric generation facilities an opportunity to generate a revenue stream above that which would be created through the operation of the electric energy market alone. The additional revenue stream pays for the identifiable environmental and resource diversity of benefits that California-based facilities provide to California ratepayers.

a.5. How is renewable self-generation handled? Is self-generated renewable energy eligible for Renewable Resource Capacity Credits (RRCCs) [Renewable Energy Credits (RECs)], or for other means of support?

This proposal does not provide any ratepayer-funded support for renewable self-generation beyond the internal economics of the project itself.

a.6. How are hybrid fossil-fuel/renewable facilities handled?

Hybrids are eligible for renewable capacity credits if the fossil component is less than 25 % of energy input.

a.7. Does out-of-state generation qualify for RRCCs [RECs]? Is it desirable or necessary to protect in-state California renewable energy generators from out-of-state competition? Is it possible?

No. California energy sellers ought not be protected from out-of-state competition and are not afforded such protection by this proposal. In-state facilities that confer identifiable environmental benefits on ratepayers should be supported by local ratepayer dollars. In this proposal, those dollars are paid for renewable capacity credits.

a.8. If hydro is included, how are practical issues associated with hydropower handled?

The practical issues associated with hydro power are handled in the same way that the practical issues associated with other renewable technologies are handled: credits are generated through operation at an average level for the technology type. Energy output is marketed in the same way that all other energy is marketed. Any operational peculiarities of the particular facility for which credits are sought are taken account of through the decision to de-rate the facility's capacity. This option is available to all technology types, including hydro.

a.9. How is utility-owned distributed renewables generation handled? Does the proposal permit or prohibit RECs being awarded to distributed renewable power not sold through the Power Exchange? How does the proposal guard against self-dealing or cross-subsidization? For example, does the proposal permit RECs to accrue to applications that may involve the cross-subsidization of generation with T&D savings, or vice versa?

Utility-owned distributed renewables are eligible for renewable capacity credits so long as there is delivery to an end-user. As noted above, renewable self-gen is not eligible for ratepayer-funded assistance. The renewable capacity credit is radically divorced from energy markets and therefore avoids all market power or cross-subsidy issues.

a.10. What is the level for the requirement? How does this level relate to the level of renewables from 1990 to the present? Does the level of the requirement increase over time, and, if so, at what rate?

The requirement is 18 percent of the seller's annual average coincident peak demand. This number is not derived with reference to historical mwh sales. It is derived with reference to the ratio of renewable capacity, including hydro-electric capacity, to forecasted peak loads in the 1994 Electricity Report. No.

a.11. Describe how, if at all, the compliance obligation adjusts during a transition period.

Not applicable.

a.12. Does the proposal include a uniform requirement for all electric providers, including utilities, on a statewide basis?

Yes.

a.13. What is the time-horizon for the program?

Permanent.

a.14. Is the requirement established on a percentage of megawatts or percentage of megawatt-hours basis?

The proposal is capacity-based, and therefore is expressed in terms of megawatts.

a.15. Does the proposal establish floors for certain technology types? What is the rationale for a technology floor, if proposed?

No.

b. Where Is the Obligation to Comply?

b.1. On whom is the requirement applied? Is the requirement applied only to entities under the CPUC's jurisdiction, or is it applied statewide?

The requirement applies to all retail suppliers of electricity to end-users located in California. The requirement is applied statewide.

b.2. Are regulated retail providers treated similarly to unregulated retail providers? If not, what are the differences?

All retail providers are treated the same, regardless of regulatory status.

b.3. What is the penalty for non-compliance? Should this penalty be interpreted as a cost-cap for the program?

The penalty for non-compliance is a 1 mill/kWh delivered by the subject retailer. This could be considered a “cost cap” for the program to the extent that it provides a quantifiable penalty amount for non-participation.

b.4. How is non-compliance determined? Who is responsible for determining non-compliance and for resolving disputes arising from such a determination?

Non-compliance is determined in a report to the Energy Commission that is responsible for all aspects of administering the program.

b.5. What provisions add flexibility to compliance, if any?

A failure to comply subjects the subject retailer to a substantial penalty. There are no provisions for a waiver, modification, or reduction of the penalty.

b.6. How does the program ensure that the policy and its costs are non-bypassable, such as the CTC or the Public Goods surcharge?

The requirement is placed on all retail providers of electricity, without exception. Only entities who are completely self-contained with respect to their electric consumption can avoid the requirement.

c. How Are Renewable resource Capacity Credits [Renewable Energy Credits] Initially Allocated?

c.1. How are RRCCs [RECs] generated from existing renewable facilities (QFs and utility-owned) initially allocate? What impact does the initial allocation have on whether a vigorous market for RECs, characterized by many buyers and sellers, forms?

Renewable capacity credits are created monthly by operation of the renewable facility at the average capacity factor scaled to the registered capacity for the facility. Once created, they are traded on the market. Compliance by retailers is determined every 12 months, and the

price of credits will be determined by the supply, which in turn is determined by the output from renewable facilities.

c.2. What is the relationship of the allocation of renewable energy credits and the CTC or Public Goods surcharge? Will RECs accrue to technologies, such as on- and off-grid renewables, in a way that would encourage customers to disconnect from the grid and avoid the CTC?

Renewable capacity credits are generated by renewable facilities without regard to their physical valuation or the value of their energy output for sale. The theory of this proposal is that renewable facilities confer benefits on California customers which California customers pay for by having their electric retailers buy credits from facilities' owners. To the extent that the stream of income represented by the credits supports continued investment in and operation of renewable facilities, it may affect both the magnitude and the duration of "CTC" or other tax on customers' participation in trading on energy markets or exchanges as envisioned by the CPUC.

c.3. If customers or ratepayers are initially allocated RECs, how are the credits administered?

Customers are not allocated capacity credits.

c.4. How would the proposed Renewable Energy Credit allocation affect negotiations to buy out existing QF contracts? Would it encourage or discourage such buyouts? Would it make them more or less cost-effective to ratepayers?

To the extent that QF buyouts are attempts to buy down the long-term capacity payment obligation so that facilities can be closed, the effect of giving an additional value to the capacity in the form of a capacity credit could have a distinct impact on existing negotiations. Simply put, the capacity would have increased economic value to the extent that the facility can be operated. From the standpoint of the QF facility owner, the decision remains the same: if the market price for energy is equal or exceeds variable costs, retaining the facility, the capacity payment, and the capacity credit value will be an appropriate choice. From the standpoint of ratepayers who have been charged by the commission with sustaining a renewable component in their electric energy portfolio, retaining operating renewable facilities in the hands of third-party owners who have an inducement to sell renewable energy should benefit them.

c.5. How does the initial allocation deal with the possibility of windfall profits accruing to individual renewables generators, or types of generators?

The theory of a renewable portfolio requirement is the need to support high-cost technologies whose internal economics would not support their continued operation or deployment. Therefore, “windfall profits” ought not exist.

c.6. Does the proposal potentially increase the value of utility-owned renewable resources in a way that would encourage their divestiture? If so, how should ratepayer interests be addressed?

To the extent that the proposal affords the owners of the renewable facilities a revenue stream in addition to that offered by the market-based price of energy, their value is enhanced. Any owner would make a decision about the retention or sale of the asset to a third party. The PUC currently has rules about allocation of gain on sale of utility asset between utility shareholders and ratepayers which this proposal does not address.

d. How Is the Program Administered?

d.1. What agency certifies the RRCCs [RECs]?

The Energy Commission.

d.2. What mechanisms are proposed for trading of RRCCs [RECs]? How do the trading mechanisms relate to the initial allocation of RRCCs [RECs]?

A credit exchange.

d.3. What mechanisms are proposed for program oversight and mid-course corrections?

An explicit authorization of the Energy Commission to adopt regulations which includes amendments to regulations.

d.4. What agency monitors and enforces compliance with the program, and how is it carried out?

The Energy Commission.

e. Cost-Related Issues.

e.1. What are the costs associated with the program and who pays?

The costs associated with the program are not susceptible of immediate quantification, because it is not clear how capacity credits will be valued initially. This same uncertainty with respect to initial valuation appeared in the SO₂ trading program under the Clean Air Act. In that program, the development of a robust price took about a year after credits were issued and trading was authorized.

e.2. What cost-containment measures, if any, are provided?

None, unless the penalty (1 mill/kwh sold) is viewed as cap.

e.3. If the program utilizes floors for certain technology types, what are the implications in terms of costs and benefits?

There are no floors or quotas specific to technology types.

e.4. Will implementation of the program lead to cost-shifting between consumer groups or regions of the state?

No.

e.5. How is competition within and between renewable technologies encouraged? Between existing renewables facilities and potential new facilities?

All renewable technologies receive credits based on their average operations. Operational characteristics specific to a renewable technology that might give it an advantage over another renewable technology are mitigated to some extent through this device. However, renewable facilities that are unable to survive under the dual revenue stream -- energy sales at market plus capacity credit sales -- will be discouraged. This would probably be the case with technologies that have both high capital costs and high operating costs.

New renewable facilities will be built when owners can observe an opportunity to profit based on the dual revenue stream generated by energy sales and capacity credit values.

e.6. What implications, if any, does the proposal have in defining the roles of the LDC and of competitive suppliers of electricity?

Since the proposal applies to all retail sellers on an equal basis, it has no specific implications in defining the respective roles of LDC and other suppliers.

e.7. What is the consistency of this proposal in relation to cost-related guidance provided by the CPUC Roadmap?

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f. How Does the Program Fit with Other Aspects of Electric Industry Reform?

f.1. Is the program compatible with the existence of an Independent System Operator? A Power Exchange? A Direct Access Market? Is the proposal consistent with the Commission's view of the role of the Power Exchange and ISO?

(a) Yes. (b) Yes. (c) Yes. (d) Yes. The proposal is independent of the operation of the energy markets, bulk, wholesale or retail.

f.2. Is the proposal dependent in any way on the Power Exchange or ISO? If so, are any additional protocols necessary?

The proposal is independent of the operation of the energy markets, bulk, wholesale or retail.

f.3. Does the proposal resolve conflicts of interest between distribution and competitive retail service? If so, how are they resolved?

The proposal is unrelated to energy delivery mechanisms.

f.4. How does the program avoid conflicts of jurisdiction between state and federal levels?

Federal law delegates to the states decisions about integrated resource planning and the definition of retail service areas within the state. The proposal respects this state/federal allocation of power as articulated by Congress. There are no state/federal jurisdictional issues unique to this program or radically different from those raised by California's specific approach to electric restructuring. Given the jurisprudence developed under the Federal Power Act, the Public Utility Regulatory Policies Act (PURPA), and the Energy Policy Act of 1992 (EPAct), concerns based on the "dormant" Commerce Clause are probably overstated.

f.5. What is the relationship between the proposal and Direct Access "Green Marketing"?

This proposal involves a radical separation between the energy market and the supplemental income stream represented by capacity credits. To the extent that "green marketing" involves the attempt to label electrons as "green" for marketing purposes, it is problematic. The creation of capacity credits facilitates honest claims about the utilization of renewable

sources, and therefore facilitates “green marketing” based on payments to support specific identifiable renewable facilities. This is one way to make “green marketing” accountable.

f.6. What is the relationship between the proposal and performance based ratemaking (PBR)? Does the proposal place RECs under PBR, or exclude RECs from PBR?

Renewable capacity credits are outside any existing or proposed PBR mechanism.

f.7. Does the program create any potential market power problems involving the generation market or RECs?

No.

f.8. How does the proposal relate to any consumer protection or consumer education efforts?

The proposal does not involve any consumer education issues.

f.9. How, if at all, does the proposal relate to RD&D programs funded by the Public Goods Charge?

The proposal does not relate to RD&D programs funded by the Public Goods Charge.

f.10. How, if at all, does the proposal relate to energy efficiency programs funded by the Public Goods Charge?

The proposal does not relate to energy efficiency programs funded by the Public Goods Charge.

f.11. How does this proposal affect the CEQA compliance work recently initiated by the CPUC?

To the extent that the proposal takes account of all existing renewable resources, including hydro, it facilitates a thorough and complete appraisal of both the existing electric generation system and plausible future scenarios. Any approach that omits from evaluation a component of the generation mix as significant as the bloc represented by hydro in California creates serious problems for environmental evaluation.

g. Legislative Requirements

*g.1 Can the CPUC implement this proposal by itself, or is legislation required?
What would the legislative requirement be?*

Legislation is required, in substantially the form in which the proposal is embodied.

*g.2 What steps are needed to implement the program, and how long would it take?
How does this implementation timing relate to the CPUC's 1998 implementation goal?*

Implementation of the proposal requires legislation, which could be enacted in the 1997 legislative session.

4. Positions of the Parties in Favor/Neutral/Oppose

Comments of the CPUC's Division of Ratepayer Advocates, the Utility Consumers Action Network, and the Independent Power Providers

DRA opposes this proposal because:

1. Inclusion of hydro will result in subsidization of a resource that is fully competitive with other generating sources.
2. A capacity-based program would be unnecessarily complex.
3. Out-of-state hydro could swamp the portfolio standard, displacing other renewable technologies. Thus, it could be better to have no renewables program than to have this one.
4. NCPA's arguments are false that a capacity-based program avoids complications from the interstate commerce clause of the federal constitution regarding exclusion of out-of-state renewables.
5. Affords tradable RECs to UDC-owned resources prior to their divestiture or spin-off.

AWEA/CBEA/GEA/STEA Comments

OPPOSE. In-state location requirement is likely to violate the Commerce Clause. Proposal by AWEA, et al. excludes hydro but includes all other renewables that serve the California market. Basing the standard on capacity, not actual production, does not create an incentive to produce more efficiently and introduces artificial rules that could lead to inefficiency and gaming. Low penalty encourages payment of fines as an alternative to compliance, defeating the purpose of the RPS, which is to maintain the current level and diversity of renewables through the market rather than by public administration.

Comments of the Surcharge/Production Credit Proposers

1. Increases MRPR 80% ignoring impacts: Rolling capacity factors mitigate hydro uneven delivery. Other renewables must adjust production seasonally to compensate for hydro fluctuations.
2. Fails to define costs: See Item 1 in AWEA Proposal comments.

3. Forces continual oversight: Oversight of rolling 12 months' data is required to ascertain certification.
4. Includes hydro, but ignores perverse incentives: Hydro is commercially competitive as a technology, but new projects may need funding to achieve commercialization. Incenting over-development of hydro will damage California's environment.
5. Inappropriately directs penalty funds to support RD&D: The CPUC decision provides RD&D funding through Public Goods Charges.

Comments of Orange County, Sonoma County, the City of Sacramento, NEO Corporation

We oppose this proposal because it has all the complications and discriminatory characteristics of the BRPU. It includes hydro, something we do not favor. It rewards technologies with poor capacity factors. We prefer nondiscriminatory treatment of all technologies - no tiers, set asides or engineered adjustments to capacity. The market would best be served with a price only auction for the supply of renewable energy.

Comments of the Union of Concerned Scientists

Oppose.

Cons: REC based on capacity instead of energy leads to perverse incentive for low capacity factor renewables. Inclusion of hydro subsidizes mature, fully commercialized technology, while doubling cost of compliance for same non-hydro renewables goal. Low 1 mil/kWh * delivered energy non-compliance penalty, roughly equivalent to a 0.55 cent/kWh REC non-compliance penalty (given 18% MRPR), encourages non-compliance, turning competitive program into administrative program by creating penalty fund. Does not support renewables growth/resource diversification since MRPR does not increase.

Comments of Los Angeles Department of Water and Power (LADWP)

DWP favors the continued support of renewable resources, however, it should be made clear to reviewers of this report that NCPA's proposal does not represent the position of all municipal utilities. The level and diversity of California's renewable resource mix should be established by the state legislature and the above-market cost for supporting renewable generation should be uniform throughout the state. The procurement of renewable resources

should be the responsibility of some state entity for the state power pool and the cost of compliance should be borne by all customers served by the UDC on a non-bypassable basis.

Comments of Southern California Edison

The NCPA proposal is similar, in some respects, to the AWEA proposal but does not have a separate requirement for biomass. However, the NCPA proposal includes hydro and has other complicating features.

Hydro is renewable but it should not be included in this program because it is generally cost-competitive, highly developed, and there are few, if any, environmentally acceptable, sites for new dams.

This proposal is based on both capacity and energy. It requires both developers and the state administrator to estimate the capacity factor of each facility that participates in the program and track it on a monthly basis along with total energy used and monthly peak loads. This is perhaps the most complicated proposal to administer.

Comments of CALSEIA/SEIA/CEC/ETDD

OPPOSE

Penalizes High Capacity Factor Technologies: Biomass and geothermal have high capacity factors versus wind and hydro yet proposal only requires a plant to match average capacity factor for its technology. Electric generation costs compete on energy cost not capacity factor, but this proposal rewards high capacity, high capital cost technologies the same as low capacity, low capital cost technologies. This unfairly compensates low capacity technologies.

Penalty Inappropriately Structured: Penalty is based on kWh while requirement is based on kW. Penalty appears to be too low and would encourage non-compliance. Also, penalty is all or nothing, not proportional to amount of compliance, thereby also encouraging payment of penalty rather than compliance.

Comments of the California Integrated Waste Management Board

Oppose: Hydroelectric power as an eligible renewable technology will tend to limit the amount of other renewables. The large volume of low cost hydro available both in-state and out-of-state has the potential to dwarf/drown competing renewable technologies.

The concept of the minimum purchase requirement is to allow for the existence of generational technologies which cannot compete with "all comers" in a spot market. There are few generational technologies that can economically compete with hydro.

Using capacity as the standard may distort the pricing of competing technologies and appears to conflict with the direction of WEPEX pricing.

Comments of Don Augenstein

Fairness requires that hydro in the renewables portfolio should entail little cost advantage or disadvantage compared to other renewables' use. Only incremental, relatively-high-cost hydro can meet this condition and it seems low cost hydro should be excluded. Yearly hydro fluctuation must be somehow managed to not adversely affect other renewables. "All or none" penalty seems too stringent; higher capacity factor renewables are effectively penalized. To date at least, the NCPA proposal does not resolve these issues, but further work could help toward resolution.

Comments of SoCAL Gas

OPPOSE - Relies very heavily on the CEC determination of capacity factors for specific facilities. Such detailed specifications invites regulatory disputes. Varying capacity factors by technology translates into varying subsidies on an energy basis, favoring renewable technologies with lower capacity factors and higher capital costs. The program lacks a cost cap. The 18% for dependable renewable capacity is based on outdated ER'94 forecasts for 1998 that implement BRPU renewable levels. The 18% is too high. The 1 mill penalty applied to all retail sales is punitive. Not crediting out of state renewables is not justified. The inclusion of hydro leads to complications.

Comments of SDG&E

Oppose:

- * No cost limitation.
- * Primarily subsidizes already-subsidized existing projects instead of new development.
- * Unequal cost: burden on consumers.
- * Relies on arbitrary penalty structure to force compliance, based on entire retail sales as opposed to non-compliance with the proposal's capacity-based minimum.
- * Inconsistent with electric restructuring; mandates distribution companies to maintain resource portfolio instead of relying on the competitive market.
- * No performance penalty if the renewable developer does not provide capacity.
- * Administratively burdensome and complex.

Comments of PG&E

PG&E believes that all the RPS proposals may be basically incompatible with the increasingly competitive generation market. This particular proposal, while very complex to implement and monitor, does have the advantage of allowing hydro to be a renewable while avoiding the problem of imported hydro taking up all the credits. NCPA's assertion that one can limit credits to only in-state resources, without concerns about Commerce Clause limitations, deserves more consideration. PG&E would prefer that this proposal contain some sunset or program review provisions.